

registering the billing data at the switching office in a debit file after authenticity checking; and

transferring registration of accounts receivable to the service provider with an identifier as a confirmation.

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16. An apparatus for electronically processing purchasing and sales transactions using the Internet, wherein goods and services are invoiced and paid for electronically, comprising a terminal which is capable of communication and a display, wherein the apparatus is connected to a switching office via a telephone network, the switching office setting up access to an Internet access computer via a data line, the switching office having an internode module for transforming incoming telephone data when data is transferred between the Internet access computer and the apparatus into a format which is suitable for display and storage in the terminal and for transforming data records derived from the Internet data transfer into a switching-office format, and wherein the apparatus processes order data transfer via the switching office, access to the Internet starting from the switching office being at least briefly interrupted after confirmation of the order, and a menu-prompted billing access to the switching office of the telephone network operator is established in order to register, with respect to billing, the order within a respective terminal-related telephone account file via the customary processing of the services for use of the telephone network.

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REMARKS

The present amendment makes editorial changes and corrects typographical errors in the specification, which includes the Abstract, in order to conform the specification to the requirements of United States Patent Practice. No new matter is added thereby. Attached hereto is a marked-up version of the changes made to the specification by the present amendment. The attached page is captioned "Version With Markings To Show Changes Made".

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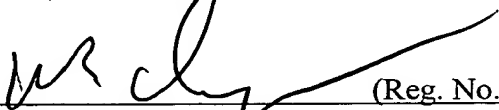
In addition, the present amendment cancels original claims 1-8 in favor of new claims 9-16. Claims 9-16 have been presented solely because the revisions by

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crossing out and underlining which would have been necessary in claims 1-8 in order to present those claims in accordance with preferred United States Patent Practice would have been too extensive, and thus would have been too burdensome. The present amendment is intended for clarification purposes only and not for
5 substantial reasons related to patentability pursuant to 35 U.S.C. §§103, 102, 103 or 112. Indeed, the cancellation of claims 1-8 does not constitute an intent on the part of the Applicants to surrender any of the subject matter of claims 1-8.

Early consideration on the merits is respectfully requested.

Respectfully submitted,


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Version With Markings To Show Changes Made

Description SPECIFICATION

~~Method and device for electronically processing purchasing and sales transactions~~

TITLE OF THE INVENTION

5 METHOD AND APPARATUS FOR ELECTRONICALLY
PROCESSING PURCHASING AND SALES TRANSACTIONS

BACKGROUND OF THE INVENTION

10 The present invention relates to a method and ~~a device~~ an apparatus for
electronically processing purchasing and sales transactions, which is referred to as
electronic commerce, using public communication networks, ~~in particular the~~
~~Internet, as claimed in the preamble of patent claims 1 and 8; in particular, the~~
Internet.

15 The practice of using the Internet, which is accessible throughout the world,
as a comprehensive information network as well as ~~for also~~ ordering or making use
of products or services which are made available on it is known.

 The processing of the actual payment transaction after the order, i.e., after
the initiation of the payment procedure, is problematic.

20 Singleton, Cash on the Wirehead, BYTE, page 71, volume 20, No. 6, dated
June 1995, discloses a ~~plurality~~ number of payment processing methods which are
all based on a credit card system and in which various methods are applied for the
encrypted transmission of data.

 It ~~has~~ also already has been proposed to additionally secure the
authorization of a payment by making a supplementary confirmation by telephone
necessary.

25 US 5,794,221 discloses a payment method using the Internet. In ~~said~~ this
publication, ~~firstly~~ first an agreement is made between an Internet provider and the
customer and then a corresponding provision is specified between the provider and
the seller or service provider. The provider declares in this agreement that ~~he~~
he/she will invoice the customer and

accept responsibility for the settlement of payments with the seller or service provider. The provider ~~himself~~ himself/herself provides network access for the customer. The transaction information between the seller and customer is supplied simultaneously to the provider, which then performs the corresponding activities such as invoicing and passing on the received payment. The provider is
5 paid for the use of the provider's services.

In the previously known solution it became apparent that it was an advantage if it was not necessary for the customer to have to communicate ~~his~~ his/her account number or similar personal data to the seller, thus preventing an
10 undesired temporary presence of this data set on the Internet which is virtually impossible to control.

However, it has become evident that in a method according to US 5,794,221, disadvantages occur in that the provider has to intervene actively into the proceedings relating to the invoicing and settlement of payment.
15 Furthermore, it is necessary for the customer to be identified with respect to the provider, during which process it is not possible to prevent third parties being able to read and to make fraudulent use of this sensitive data about the provider.

In view of the above, ~~the~~ an object of the present invention is to disclose a method and ~~a device~~ an apparatus for electronically processing purchasing and sales
20 transactions, which is referred to as electronic commerce, using public communications networks, in particular the Internet, the intention being to increase security when accessing a network and making use of services via the network without having to impose security-related functions on the network provider.

~~The object is achieved according to the invention with a method as defined according to patent claim 1, and with a device for carrying out the method according to the features of patent claim 8.~~
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SUMMARY OF THE INVENTION

The basic idea of the present invention consists, accordingly, in ordering goods and/or services ~~by means of~~ via the Internet starting from a terminal which is
30 capable of communication and has a display or monitor, in particular a personal

computer, via an access node, and electronically paying for these goods and/or services, the terminal which is capable of communication processing the order data transfer via a switching office.

After confirmation of the order, the access to the Internet starting from the switching office is at least briefly interrupted and a menu-prompted billing access to the switching office of the telecommunications network operator is set and/or set up. With the menu-prompted billing procedure, it is then possible to register, with respect to billing, the order within the respective telephone account file relating to the terminal, and later settle payment ~~by means of~~ via the customary processing of the services for the use of the telecommunications network.

It is a defining feature that before the order data or billing data is registered in the telephone account file, a PIN (Personal Identification Number) input together with ~~checking, i.e. an~~ authenticity check, is carried out.

As a result of the at least brief disabling of the access between the Internet and the switching office, unauthorized access for a third party which has monitored the ordering process can be prevented. Of course, it is also possible to allow the link to exist online and block external access only within the framework which is referred to as a firewall function.

The order data and billing data are then stored, for example, in a separate memory area of the telephone account file, it then being possible to register supplementary data such as information on the date and/or the specific type of goods or service.

The order data and billing data can be stored in coded form. It is also conceivable to provide for the data to be output on a customary telephone bill in encrypted form; for example, by reference to product or services codes.

Confirmation protocols, which are transferred to the service provider via the Internet in a fashion known per se are created in an automated fashion from the registered and stored order data and billing data. The confirmation protocols do not, however, contain any security-related information; for example, the PIN, a credit card account number or the like.

A data link is established to the telephone data-registering computer, which is generally located in the switching office, is established in the respective switching office after a menu item has been called and authenticated ~~by means of~~ via the personal computer, it being. It is possible also to activate the menu during
5 the online state of the personal computer and access the Internet so that the user is capable, even when accessing a homepage of a service provider, to activate a menu bar and/or open the appropriate menu in order ~~then to~~, if desired, ~~to~~ bring about the payment processing, during which care is automatically taken to ensure that the Internet access is interrupted or the firewall protection measure is activated at the
10 relevant moment.

In order to increase security, the order data is firstly loaded onto the terminal, namely the personal computer, via the Internet, and the order is registered at the service provider end. Then, in a separate link, the set of billing data associated with the order is transmitted from the terminal of the memory to the
15 switching office and registered there in a debit file after authenticity checking. The registration of the accounts receivable is then transferred to the service provider together with an identifier as a confirmation.

At the device end, a terminal which is capable of communication and has a display (personal computer) is provided for carrying out the method, ~~said the~~
20 terminal being connected to a switching office via the telephone network. The switching office sets up access to an Internet access computer (provider) via an appropriate data line.

The switching office contains an internode module, ~~said the~~ internode module converting incoming telephone data when data is transferred between the
25 Internet access computer and the terminal into a format which is suitable for display on, or storage in, the personal computer or terminal, but also transforming data records derived from the Internet data transfer into a switching-office format. The internode module creates, as it were, a symbiosis between telephone traffic and digital data transfer.

The invention will be explained in more detail by means of an exemplary embodiment and a figure.

Additional features and advantages of the present invention are described in, and will be apparent from, the following Detailed Description of the Invention and
5 Figures.

The figure shows here

BRIEF DESCRIPTION OF THE FIGURES

Figure 1 shows a basic view of the access to the Internet starting from a personal computer in connection with the teachings of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

The terminal, in particular a PC 1, is connected to the public telephone network via a suitable modem or an interface. In the relevant supply area, at least one switching office 3 is provided which both sets up call-number-selected links and registers call times for later billing.

15 A link is established via the switching office 3 to an Internet access computer 4 which is operated by what is referred to as a provider.

The Internet access provider 4 then permits access to the Internet which is illustrated symbolically by the reference symbol 5.

20 In the switching office there is an internode module 6 which makes it possible for services of conventional telephone systems to be provided with the possibilities of Internet-enabled personal computers. The internode makes it possible for network operators and users to use their existing infrastructure such as leads or switching systems in a systematic fashion for the World Wide Web.

25 In particular, in the exemplary embodiment, the order data transfer is processed via the switching office when Internet services are made use of. Such use can be, for example, the ordering of goods or services.

After confirmation of the order, the access from the switching office 3 via the access computer 4, or the access to the Internet, is briefly interrupted or disabled for incoming data in order to optimize security. In the personal computer 1, a
30 menu-prompted billing access to the switching office 3 is then established and/or

set up in order then to register, with respect to billing, the order within a corresponding terminal-related telephone account file or to process payment ~~by means of~~ via the customary processing of the services for the use of the telecommunications networks; for example, the call data registration.

5 Of course, for reasons of security, it is also expedient here to carry out authenticity checking ~~of the~~ of the user with respect to the personal ~~computer~~ computer by, for example, inputting and interrogating a PIN. Furthermore,

 for later verification purposes, the order data and billing data should be stored in a separate memory area of the telephone account file in the switching
10 office or in a computer located there.

 The user who has made use of the Internet service via the personal computer 1, then receives, for example with ~~his~~ his/her monthly telephone bill, a request to pay for the goods ordered or services provided.

 In the method described, the possibility of personal data such as credit card
15 numbers, account information or the like being conducted over the Internet is ruled out. The particular problem with the Internet is that data and information are held and buffered for a relatively long time on various node computers, and also at the providers, and that as a result of the channeling of a multiplicity of information there is always the risk of third parties interrogating data in a selected fashion and
20 making fraudulent use of it.

 The order data and billing data which are stored in the switching office 3 or a computer located there are then used for automatically creating a confirmation protocol which is communicated to the service provider via the Internet. This communication can take place directly after the order but also at times of little
25 traffic so that only low supplementary costs are incurred for the operator of the public telephone network 2.

 In a further exemplary embodiment, a menu item or a menu is activated by the personal computer 1 after the call and authentication confirmation, and a link is established to the switching office; i.e., a data link to the telephone data-registering
30 computer. Of course, the menu ~~can~~ also can be activated during the online state of

the personal computer and instantaneous access to the Internet, the transmission of order data with the consequent production of billing data being, however, not performed until after the Internet link has been disconnected.

To do this, the order data first can ~~firstly~~ be loaded onto the personal
5 computer 1 over the Internet, and the order registered at the service provider end. The billing data associated with the order is then transmitted, with a separate link, from the personal computer 1 to the switching office 3 and registered in a debit file after further authenticity checking. The confirmation of the accounts receivable registration with the service provider ~~by means of~~ via an identifier is also carried
10 out separately.

The switching-office-end operator, for example the telephone company, performs the settlement of the payment to the service provider or supplier after receipt of payment has been indicated.

The present solution provides the advantage that security-related personal
15 data no longer has to be transferred over the public Internet, providing significant advantages in terms of security during payment transactions and the trust of users and customers in the payment system.

Patent Claims Although the present invention has been described with reference to specific embodiments, those of skill in the art will recognize that
20 changes may be made thereto without departing from the spirit and scope of the invention as set forth in the hereafter appended claims.

ABSTRACT OF THE DISCLOSURE

~~The invention relates to a method and a device~~ A method and apparatus for electronically processing purchasing and sales transactions using public communications networks. ~~An order, wherein an~~ data transfer is processed via a switching office (3) ~~by means of~~ via a personal computer(1). ~~The, and the~~ payment for the goods received or services provided is carried out, in a way similar to the production of a telephone bill, ~~by means of~~ via a menu-prompted billing access to the switching office, without it being necessary to transmit security-related data over the Internet(5).

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Figure